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ABSTRACT

Prompted by the concern of Extension faculty involved in providing leadership for 4-H programs that the literature being provided is not used to an extent expected/intended--to an extent that would justify costs involved, a two-phased study was conducted. One phase examined Wisconsin 4-H literature against a framework of what constitutes adequate instructional materials design. The second phase examined, by means of open-ended interviewing, the use actually being made of the literature by adult volunteer leaders and 4-H members. In phase 1 (described in this report) the content of 175 items of literature, ranging from a one-sheet leader planning guide to an 80-page bulletin, was examined in five dimensions: (1) Overview (how the publication measured up in terms of the presence or absence of purpose, objectives, contents, and color), (2) instructional design elements, (3) readability elements, (4) types of learning outcomes, and (5) humanistic approach (how the materials took into consideration the dignity of the person and his/her capacity for self-realization; whether material was stereotyped). Overall, it was concluded that the instructional materials examined were strongly oriented to providing verbal information--to the near exclusion of more complex learning outcomes. In addition to suggesting that consideration be given to concern for types of learning outcomes, the findings raised serious questions about the adequacy of the design of the materials. The adequacy of the readability dimension appeared to be the primary strength of the materials. (SH)

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PRINTED LITERATURE ADEQUACY AS INSTRUCTIONAL MATERIALS IN NON-FORMAL LEARNING SITUATIONS: AN EXPLORATORY STUDY BASED ON INSTRUCTIONAL DESIGN THEORY*

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"The best way to design instruction," according to Gagné and Briggs, "is to work backwards from the outcomes it is expected to have" (2: 21). However, these authors go on to say that "we tend to structure education in terms of 'subject matters' that are actually gross simplifications of educational goals, rather than activities reflecting the actual functions of human beings in society" (2: 21). They conclude that in order to design instruction we must seek means of identifying *human capabilities* that enable us to focus on outcomes.

No segment of our educational enterprise is more conscious of the need for providing learning opportunities that facilitate participants in improving their capacity/skill/perspective for coping with their everyday existence and challenges than those in adult/continuing education. With such a consciousness, it seems reasonable to expect that literature dealing with instruction (facilitating learning) of adults would focus on desired/expected outcomes as the basis for designing instruction. (The instruction of adults is commonly discussed in the literature under the headings of method/techniques/strategies.)

To pursue briefly the matter of literature which deals with how adults can be instructed: An exploratory study has been completed which undertook an examination of adult/continuing education literature dealing

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with methods. It was undertaken with this question in mind: What type(s) of learning outcomes can be facilitated by a given method, as is revealed by the evidence/contentions incorporated into that literature? It was assumed that any inquiry being reported in the literature which undertook to compare one method with another should be raising the question of the degree to which the methods being compared can reasonably be expected to facilitate given, predetermined types of outcomes. Or, should any given method be considered to provide equally appropriate learner experiences regardless of outcomes? In other words, it was assumed that the investigator who seeks to compare any selection of methods would be consciously designing the inquiry with a variety of possible outcomes to be tested as the basis for judging the adequacy/appropriateness of the methods under study.

Such an investigation was stimulated by a prevalent interest expressed among adult/continuing educators as to what are "the best methods" to be used in adult/continuing education. The investigation being referred to (6) concludes that the question of what is/are the best method(s) to use in adult/continuing education is the wrong question to start with when undertaking to design instruction (learning activities). The study reveals that the adult/continuing education literature which deals with methods (in this case certain selected methods) has little to say specific to types of outcomes that can/should be expected to be facilitated by a given method. Methods are described with little or no evidence revealed that the author(s) were thinking in terms of facilitating a specific or a range of types of learning outcomes.

It also seems reasonable to expect that materials (literature) providing the substance of instruction (rather than being restricted only to method) would be consciously/intentionally designed to facilitate the

improvement of the range of *human capabilities* which are involved in the area(s) of endeavor for which the intended instruction is to be provided.

This paper reports on an investigation concerned with the adequacy of a specific set of adult literature with the more substantive "subject matter" orientation. The question guiding the inquiry was this: How adequate as instructional materials is literature provided for the 4-H Club program by the Extension Service. The study undertook to examine literature provided for youth as well as that prepared specifically for adults who function as volunteer leaders in the program. This paper is concerned only with the adult-oriented literature. The study was prompted by an uneasiness among Extension faculty concerned with providing leadership for the 4-H program that the literature being provided is not used to an extent expected/intended--to an extent that would justify costs involved.

On the assumption that the materials being provided are intended to be instructional materials, a two-phase study was initiated in 1975-76. One phase undertook to examine Wisconsin 4-H literature against a framework of what constitutes adequate instructional materials design. The theoretical framework was established from the writings of scholars concerned with instructional design. The second phase undertook to examine, by means of open-ended interviewing, the use actually being made of the literature by adult volunteer leaders and 4-H members. This paper deals with the phase of the study which inquired into the literature's adequacy as instructional material. It can be characterized as a content analysis inquiry.

Background

This project was undertaken at the request and in cooperation with the 4-H/Youth Development Program staff of University of Wisconsin-Extension.

That staff was seeking more systematic evidence on the extent and nature of use being made of literature they were producing and distributing to participants in the 4-H Club program (both youth and adult volunteers serving as leaders). They were anxious to know if the returns on the $80,000 expended annually on such literature justified that use of scarce resources.

In the process of inquiring into what had already been done in the way of examining 4-H literature, the investigators made a national search (each state Extension Service conducts a 4-H/Youth Development program and provides a set of literature). Two things pertinent to our efforts emerged:

1. Very little had been done anywhere that provides any degree of substantive insight into the adequacy of 4-H literature.
2. There is widespread interest in the question of how adequate/useful 4-H literature is.

In terms of what had been undertaken, the following inquiries were discovered:

1. A Master's study conducted in Tennessee (4) which asked Extension professionals who were directly responsible for county 4-H programs (agents) or who had other responsibilities in the program (e.g., subject matter specialist, supervisor) to make judgments on: (a) a proposed set of criteria as to what should be included in a piece of literature; (b) the desired organization (structure) of the literature; and (c) the quality of content and organization of existing literature.
2. The first of a two-stage study designed to be conducted in California completed in draft report form (3). Stage one asked the following questions: (a) Which 4-H publications do leaders and members possess?; (b) How much are they used?; (c) How helpful are they?; and (d) How are they distributed?

Stage two was to inquire into the effectiveness of the literature in bringing about desired changes in 4-H Club members. Stage two has not been undertaken.

3. A Master's study undertaken in selected counties in Wisconsin (5) which collected data from 4-H members. Among other things, those providing data were asked to reveal where they sought/received assistance (including literature as a possible source of help).
4. A few less formalized inquiries, such as a graduate class evaluation project, undertaken at the University of Wisconsin, which asked volunteer adult leaders and 4-H members in one county to respond to questions about ways literature in a selected group of five projects is helpful (7).

None of these inquiries addressed the question of adequacy of the literature in a substantive sense. The second stage of the California study, as intended, appears to have had potential for providing insight into the question.

The literature of concern in the study being reported in this paper has been developed in one of three ways:

1. Within the state of Wisconsin for state-wide use.
2. By some other state and adopted/adapted by Wisconsin.
3. Nationally for use in all states.

The manner in which this literature has been developed is similar to the way most instructional materials come into existence: A subject specialist or group of specialists recognized as competent in the subject content of proposed piece of literature prepares the materials. They may be assisted or counseled by those who are recognized as specializing in 4-H/Youth Development. The materials would typically be edited and produced by journalists, in consultation with the author(s). Seldom, if ever, would an instructional design expert be involved, unless the 4-H/Youth Development specialist has competence in that area.

Methodology

For the content analysis phase of the study it was decided that all items of literature made available state-wide in Wisconsin would be included; for the interview phase a sampling would be used. A complete collection of literature currently in use in the 4-H program was provided the investigators by the 4-H staff. This collection included 48 items prepared specifically for adult volunteer leaders, 111 items prepared specifically for youth (4-H members), and 17 items prepared to serve both adults and youth--a total of 176 items. These 176 items of literature ranged in length from a one-sheet (two-page) leader planning guide to an 80-page 4-H member bulletin, with an average of 20.6 pages. Of the 48 publications for adult volunteer leaders there was a range in length from 2 to 20 pages, an average of 11.4 pages.

For purposes of some aspects of this analysis, these 48 adult publications were divided into sections, ranging from a publication with only one section to one divided into 36 sections. The average number of sections per publication was 8.9. A section was a unit of a publication with a relatively singular intent/message/idea. The division into sections was made by those engaged to perform the content analysis (subsequently referred to as the analysts).

The content of each publication was examined in five dimensions:

1. Overview--from an overall perspective how did the publication measure up in terms of the presence or absence of the following elements: (1) stated purpose, (2) more specific objectives, (3) a table of contents, (4) logical ordering of those contents, (5) a glossary of key terms, and (6) color. In addition to noting whether these elements were present or not, a judgment was made as to the adequacy in each instance where the element was present (on a 5-point scale), including the possibilities

of a neutral judgment, two degrees of negative judgment, and two degrees of positive judgment.

2. Instructional design elements--did the publication include those elements typically considered essential in adequate instructional design: (1) communicative objectives, (2) connections to previous learning, (3) motivation, (4) provisions for feedback, and (5) bases for self-assessment. Again, the adequacy of the element when present was rated on a 5-point scale.
3. Readability elements--was the publication presented in such language and in a manner that it could be judged readable for the age level for which it was intended, in terms of: (1) vocabulary level, (2) comprehensability, (3) use of space, (4) literary style, and (5) illustrations when used. Since these elements would be present in all cases to be recorded, they were judged on the 5-point scale.
4. Types of learning outcomes--what type of learning outcome could be judged to be intended from what was presented: (1) acquiring verbal information, (2) intellectual skills, (3) cognitive strategies, (4) motor skills, and (5) attitudes. Judgments were made only in regard to whether or not each type of learning outcome was present.
5. Humanistic approach--did the materials presented take into consideration the dignity of persons and their capacity for self-realization; did the materials introduce possible stereotyping or biases by ommission or commission.

Except for the humanistic approach angle, the dimensions of this content analysis were developed from literature on instructional design, with heavy reliance on Gagné and Briggs (2). The humanistic perspective was incorporated due to an interest among Extension faculty as to whether or not the

literature violates, to any extent, Extension's commitment to affirmative action. (Findings in regards to that dimension are not reported here.)

See Appendix A for the analysis worksheet used in examining and recording judgments in the content analysis. See Appendix B for definitions of the various elements in each of the five dimensions.

Three advanced graduate students in instructional design were engaged to make the content analysis. In addition to their academic backgrounds in instructional design, they had had experience as a 4-H member and/or leader, therefore were familiar with the program and its purposes. They were engaged in an intensive orientation/training effort with one of the investigators in preparation for their assignments. During the orientation process for the analysts, the definitions of the various elements were examined carefully, adjusting definition language initially taken fairly directly from the literature to a more common way of expressing the element in order to reach common understanding.

The 176 items of literature were divided randomly into three equal stacks; each analyst was given one stack. In the process of conducting their analysis there was frequent interaction to insure consistency in applying the analysis instrument.

Analysts were instructed to first examine each item of literature, making judgments on the overview elements. Next they were to divide the publication into sections. Their judgments on all other dimensions of the analysis were to be made with a section as a unit of analysis.

Findings

Findings from the content analysis phase of the study are presented from four of the perspectives by which the literature was examined: (1) readability, (2) overview, (3) design elements, and (4) types of learning outcomes.

These perspectives are ordered in this presentation in relation to the degree of abstractness of the elements involved, starting with readability and ending with types of learning outcomes. We have fairly well-developed bases for observing the less abstract characteristics of readability; types of learning outcomes require perhaps the greatest degree of abstract insight in order to make judgments.

Readability

The five elements of readability and judgment on the quality of those elements as observed in the literature are presented in Table 1. The five-point scale used in the recording instrument (Appendix A) has been collapsed into three categories due to the small proportion of cases reported in the two extreme points of the scale. For purposes of this examination a section of a publication served as the unit for analysis.

TABLE 1. Quality Rating of 4-H Adult Volunteer Leader Literature in Relation to Readability Elements, by Sections (N = 412)

Readability Elements	Quality Rating							
	Negative		Neutral		Positive		Total	
	No.	%	No.	%	No.	%	No.*	%
Vocabulary level	3	1	68	17	340	82	411	100
Comprehensibility	7	2	60	14	344	84	411	100
Use of space	7	2	84	20	320	78	411	100
Literary style	7	2	69	17	333	81	409	100
Illustrations	8	6	33	25	90	69	131	100

*Variance from total N of 412 due to missing data except in regards to illustrations. Illustrations were present only in 131 of the 412 sections.

On the basis of the judgments made, it appears that his literature rates well in terms of readability for those for whom it is intended (adults). The quality of the ratings is predominantly positive for all five elements of readability. There is little variation in quality from one element to another, except for illustrations. The quality appears somewhat lower for illustrations than for other elements. It should be noted that the number of instances in which illustrations were observed was lower than for other elements; illustrations did not occur in every section of the literature. With the possible exception of illustrations, it can be concluded that this set of literature is not appreciably deficient or inadequate insofar as readability is concerned.

Overview

A second perspective from which this literature was examined involved judgments about a set of elements referred to as overview. Each publication constituted the unit for analysis in making these judgments. First, observations were made as to the presence or absence of each element. Making such observations was relatively straight forward--not involving any particularly high level of abstract judgment. Rating the quality of the elements when observed to be present involved a more abstract judgment. Results of this set of observations are reported in Table 2.

The elements are presented in an order of the largest to smallest number and percent of instances in which they were observed present (reported in the "yes" column). A stated purpose was observed in almost all cases (96 percent). Presence of a glossary was observed in relatively few cases (11 percent). The judged quality of each element tended toward the positive in all elements except color. In the relatively few instances in which color was observed present (6 of 48), the judgment of quality was more likely to be

TABLE 2. Presence and Quality Rating of 4-H Adult Volunteer Leader Literature in Relation to Overview Elements by Publication

Overview Elements	Present				Quality Rating if Present							
	No		Yes		Negative		Neutral		Positive		Total*	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Purpose	2	4	44	96	0	-	6	13	38	83	46	100
Logical order	3	7	42	93	0	-	9	20	33	73	45	100
Explicit objectives	10	22	36	78	0	-	5	11	31	67	46	100
Table of contents	28	62	17	38	0	-	2	5	15	33	45	100
Color	41	87	6	13	0	-	4	9	2	5	47	100
Glossary	42	89	5	11	0	-	1	2	4	9	47	100

*The total numbers vary from the actual total of 48 publications due to missing data. Calculations in the table are based on the actual number of cases analyzed as representing 100 percent.

neutral than positive (4 to 2). It might be appropriate to question whether the relatively low occurrence of a table of contents, of color and a glossary of key terms diminishes in any important respects the instructional quality of a piece of literature of the nature under study. Data provide no basis for concluding one way or another.

Design Elements

On the assumption that if there are identifiable elements to be taken into account in instructional design, these elements should also be observable in the design of instructional materials. Such observations were made with a section of literature (subsection of a publication) as a unit for analysis.

The consequences of observations made in relation to design elements are presented in Table 3. Two separate types of observations are reported: (1) if the element was or was not observed to be present in a section, and (2) how adequate the elements were judged to be in those cases where they

TABLE 3. Presence and Adequacy Rating of 4-H Adult Volunteer Leader Literature in Relation to Instructional Design Elements by Sections (N = 412)

Design Elements	Present				Adequacy Rating							
	No		Yes		Negative		Neutral		Positive		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.*	%
Communicative objectives	64	16	329	84	0	-	54	14	275	70	393	100
Motivation	151	38	249	62	0	-	39	10	210	52	400	100
Feedback	295	72	116	28	0	-	42	10	74	18	411	100
Previous learning	311	76	98	24	0	-	37	9	61	15	409	100
Self-assessment	371	91	37	9	0	-	8	2	29	7	408	100

*Variation from that of 412 due to missing data

observed to be present. The nature of the design elements reveals that judging the presence or absence involved a more abstract judgment than was the case for either the overview or readability elements.

The design elements are ordered in Table 3 from the most frequently observed (the presence of communicative objectives, in 84 percent of the cases). Feedback and connection to previous learning were observed in about one case in four; motivation in nearly two-thirds of the cases. Judgments of adequacy of elements when observed as present tended strongly toward positive, but less strongly so in relation to feedback than for the other elements.

Again, the data do not answer the question of whether or not these design elements *should be* present in each section of literature. What the data do reveal is that if the design elements should be present this literature is substantially deficient in three of the five elements, and perhaps enough so for the two elements to cause concern.

The analysis presented in Table 3 takes one element at a time. Perhaps the more important question is the extent to which design elements occur together. If these elements are critically important, should they not be present together. Table 4 presents findings when such a question was asked, with sections taken as the unit of analysis. The analysis was carried out by asking the frequency with which the motivation element occurred together with the communicative objectives element (the two elements occurring with highest frequencies). Next, feedback was added as a third element occurring together with the two more frequently occurring ones, etc.

TABLE 4. Instructional Design Elements in 4-H Adult Volunteer Leader Literature in Cumulative/Multiple Combinations by Sections (N = 412)

Design Elements	Present Singly No.	%	Possible Combinations by Actual Number and Percent of Total
Communicative objectives	329	80	54% (222)
Motivation	249	60	
Feedback	116	28	21% (85)
Previous learning	98	24	5% (19)
Self-assessment	37	9	2.5% (10)

Table 4 reveals that in only 10 of 412 cases (2.5 percent) did all 5 elements occur together in a section. The two most frequently observed elements (communicative objectives and motivation) occurred together in slightly over half the cases. The three most frequently observed elements were found together in about one section in five. Four elements were observed present in one section in 20.

If it should be judged that these design elements *should be* observable together in each identifiable section of literature, then there are serious deficiencies revealed by this analysis.

However, it could be that even though the presence of these design elements should be observable together in instructional literature, they should be observable as occurring in a total piece of literature rather than in each section. In order to examine that possibility, the data were studied with a publication, rather than a section of a publication, as the unit of analysis. The results of that examination is presented in Table 5. As might reasonably be expected, the frequency of finding the elements together was higher when the unit of analysis was changed from 412 sections to 48 publications.

TABLE 5. Instructional Design Elements in 4-H Adult Volunteer Leader Literature in Cumulative/Multiple Combinations by Publications (N = 48)

Design Elements	Present singly		Possible Combinations by Actual Number and Percent of Total			
	No.	%				
Communicative objectives	46	96	83% (40)	40% (19)	15% (7)	4% (2)
Motivation	43	90				
Feedback	24	50				
Previous learning	25	52				
Self-assessment	18	38				

There were only two cases (4 percent) where all five design elements were observed to be present in a publication. The three most frequently observed elements occurred together in only 40 percent of the publications (19 of 48). Communicative objectives and motivation were observed together

by publication slightly more than twice as frequently than when taking three elements at a time (83 percent compared to 40 percent).

If these five elements are in fact critical in the design of instructional materials, these publications can be judged to be substantially deficient. However, the data do not answer the question of whether or not these elements are critical.

Types of Learning Outcomes

Perhaps the most potentially significant perspective from which the literature was examined is concerned with possible types of learning outcomes. Going back to the opening paragraphs of this paper, Gagné and Briggs (2) maintain that human capabilities are of a variety of possible types. Saying it another way, all possible learning outcomes are not the same. This has been suggested in a number of ways. For example, Bloom et al (1) developed a taxonomy of objectives that can be demonstrated by analyzing a range of examination questions used by instructors in testing students. Others have proposed other possible classifications. In this study Gagné and Briggs' typing of learning outcomes was used. Observing the literature for possible presence of these various types of outcomes required perhaps the most abstract judgment on the part of the analysts.

The outcomes of this inquiry, when the section of a publication was taken as the unit of analysis, are reported in Table 6. First, the frequency and percent of observed cases is reported. The frequency varied from virtually 100 percent of cases (410 of 412) for verbal information (the discrepancy is due to missing data) to only one percent for cognitive strategies. Intellectual skill type of outcome was observed in only one case in twelve (8 percent); attitudinal outcomes in roughly half the cases; motor skills in 4 out of 10 cases.

TABLE 6. Types of Possible Learning Outcomes Present in 4-H Adult Volunteer Leader Literature in Cumulative/Multiple Combinations by Sections (N = 412) *

Types of Possible Learning Outcomes	Present singly No.	%	Possible Combinations by Actual Number and Percent of Total
Verbal information	410	100	23% (94)
Motor skills	175	42	6% (25)
Attitudes	199	48	5% (2)
Intellectual skills	33	8	0% (0)
Cognitive strategies	3	1	

*Variation from the total N of 412 due to missing data

When data were examined to see how these outcomes occurred in multiple combination, verbal information and motor skills occurred together in about one section in four. It should be pointed out in the case of Table 6 that the frequency with which the different types of outcomes were observed is not entirely in the decending order of frequency; attitudinal outcomes were observed more frequently than were motor skill outcomes in the adult literature. The order for the table was established on the basis of frequencies for all literature studied (adult and youth). If the order of motor skills and attitudes had been reversed in Table 6 (and Table 7) the level of combination for verbal information and attitudes would probably have been slightly higher than verbal information and motor skills in the adult literature.

The three most frequently observed types of outcomes occurred only in six percent of the 412 sections. All five outcomes were not observed to occur together in any section; four were observed occurring in only one section in 200.

As with design elements, it may be more important to consider the extent to which types of learning outcomes occur together in a total publication

rather than in a section of a publication. Data which reflect such an examination are presented in Table 7. All five types of learning outcomes did not occur in any single publication. The three most frequently observed types of outcomes (verbal information, motor skills, and attitudes) occurred together in slightly over half the publications.

TABLE 7. Types of Possible Learning Outcomes Present in 4-H Adult Volunteer Leader Literature in Cumulative/Multiple Combinations by Publication (N = 48)

Types of Possible Learning Outcomes	Present singly		Possible Combinations by Actual Number and Percent of Total			
	No.	%				
Verbal information	48	100	69% (33)	52% (25)	10% (5)	0% (0)
Motor skills	33	69				
Attitudes	44	92				
Intellectual skills	11	23				
Cognitive strategies	3	6				

These data do not answer the question "should these learning outcomes occur together"; or, even, "should they occur at all in relation to what the developers of the materials have intended." However, if the range of learning as reflected by these types have been intended, the literature examined is substantially deficient.

The investigators became curious as to the possibilities with which all possible pairs of types of learning outcomes might be occurring together when the publication is the unit of analysis. Table 8 presents the results of that inquiry. Verbal information and attitude type outcomes were observed together more frequently than any other pair (in 90 percent of the publications). Verbal information and motor skills were observed as occurring together in

TABLE 8. Types of Learning Outcomes Occurring in Pair Combinations in 4-H Adult Volunteer Leader Literature by Publication (N = 48)

Types of Learning Outcomes	Occurrences	
	No.	%
Verbal information & attitudes	43	90
Verbal information & motor skills	33	69
Verbal information & intellectual skills	11	23
Verbal information & cognitive strategies	3	6
Attitudes & motor skills	25	52
Attitudes & intellectual skills	7	15
Attitudes & cognitive strategies	1	2
Motor skills & intellectual skills	7	15
Motor skills & cognitive strategies	0	-
Intellectual skills & cognitive strategies	2	4

69 percent of the publications; attitudes and motor skills in slightly over half (52 percent)oof the publications. No other combination was observed to occur as frequently as one publication in four.

Again, the data do not answer the question should these types of learning outcomes be occurring together. They do point out that if they should, the literature is substantially deficient in respect to combinations of some of the types of possible outcomes.

Comments

The investigation being reported is an attempt to critically examine a set of materials created to assist adults in performing a role for which they

have volunteered. The question guiding the investigation is that of the adequacy/usefulness of these as instructional materials. For purposes of the investigation, adequacy/potential usefulness has been defined in five dimensions: (1) readability, (2) overview, (3) design elements, (4) types of learning outcomes, and (5) humanistic approach. Each of these dimensions have been further divided into elements. Findings related to the first four of the dimensions provide the bases for the analysis reported here.

These dimensions and elements have been extrapolated from literature dealing with instructional design. Insofar as this study is concerned, the question of should instructional materials contain/reflect these dimensions and elements can be answered only by the fact that scholars who have prepared literature on instructional design say so. This investigation does not provide evidence by which the "should" question can be judged.

The judgments required in order to make the necessary analysis of the literature vary in abstractness from less abstract for elements of readability to substantial abstractness when assessing the presence or absence of types of learning outcomes represented. The analysis in relation to types of learning outcomes is considered to be potentially the most important aspect of the investigation.

The findings confirm for the literature examined what can be observed in much of the instructional efforts that are undertaken with adults; the presentation of verbal information predominates, irregardless of the nature of learning outcomes desired. Apparently it is assumed that if would-be learners are presented with information they can use it in creating for themselves whatever learning outcomes are desired. A similar orientation can be observed when attempts are made to assess the consequences of learning experiences provided adult learners: Information is presented; participants are tested to see what information they remember well enough to repeat (usually

by written exercise). This testing is carried out and the effectiveness of the learning experience is judged on the basis of such test results--without regard for what the experiences are intended to produce in the way of changes in behavior.

An illustration of the above-mentioned practice is the relatively extensive effort that has been made to evaluate the effectiveness of the Expanded Foods and Nutrition Program operated by the Cooperative Extension Services. The program is designed to assist the disadvantaged (low-income and other impoverished segments of society) in improving their nutritional habits. The program is typically evaluated by testing how much of the verbal information that has been presented can be repeated by program participants. The real deficiencies of the method of evaluating arise out of the fact that we delude ourselves by assuming that being able to recall verbal information is equatable to changes in nutritional habits. Changing nutritional habits is a much more complex type of learning outcome than recalling verbal information.

Reference was made in the introductory paragraphs of this paper to a study which has investigated discussions of teaching methods in adult education literature (6). That study reveals that authors of such materials give little or no explicit attention to a consideration of the learning outcomes that might be facilitated by a given method. It can also be observed that investigations undertaken which attempt to compare two or more teaching methods typically assess the relatively effectiveness of the methods on the basis of participants' ability to recall and repeat verbal information.

The investigation reported in this paper reveals that the instructional materials examined are strongly oriented to providing verbal information--to the near exclusion of more complex learning outcomes.

In addition to suggesting that careful consideration should be given to the concern for types of learning outcomes that can be facilitated by these

instructional materials, the findings raise serious questions about the adequacy of the design of the materials. The design can be viewed in relation to analysis of overview and design elements. The adequacy of the readability dimension appears to be the primary strength of the materials. To the knowledge of the investigators this study represents the first such effort. It should be considered exploratory/developmental. With the most stringent reservations about the methodology, this inquiry could be considered, at best, a consciousness-raising attempt to examine instructional materials. With tentative confidence in the methodology and the rigor with which it was applied, it is possible to speculate that a useful and exploratory beginning has been initiated of a line of possible productive inquiry that has the potential for a significant impact.

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Appendix A

4-H LITERATURE ANALYSIS WORKSHEET

RECORDING AND JUDGMENT SCALE

Categories	Attempted yes	Attempted no	Minus 1	Minus 2	Neutral 3	Plus 4	Plus 5
I. OVERVIEW							
Purpose	___	___	___	___	___	___	___
Objectives	___	___	___	___	___	___	___
Logical ordering	___	___	___	___	___	___	___
Glossary	___	___	___	___	___	___	___
Table of contents	___	___	___	___	___	___	___
Color	___	___	___	___	___	___	___

	Attempted yes	Attempted no	Minus 1	Minus 2	Neutral 3	Plus 4	Plus 5
II. DESIGN ELEMENTS							
Objectives communicated	___	___	___	___	___	___	___
Previous learning	___	___	___	___	___	___	___
Motivation	___	___	___	___	___	___	___
Feedback	___	___	___	___	___	___	___
Self-assessment	___	___	___	___	___	___	___

	Minus 1	Minus 2	Neutral 3	Plus 4	Plus 5
III. READABILITY					
Vocabulary level	___	___	___	___	___
Comprehensibility	___	___	___	___	___
Space	___	___	___	___	___
Literary style	___	___	___	___	___
Illustrations, photographs	___	___	___	___	___

	Attempted yes	Attempted no
IV. TYPE OF LEARNING		
Information	___	___
Intellectual	___	___
Cognitive strategies	___	___
Motor skill	___	___
Attitude	___	___

	Minus (negative) 1	Minus (negative) 2	Neutral (omitted) 3	Plus (positive) 4	Plus (positive) 5
V. HUMANISTIC APPROACH	___	___	___	___	___

DEFINITIONS

I. OVERVIEW

Purpose--a general purpose for the document is stated or implied.

Objectives--the specific learning outcomes for the document are explicitly stated (hopefully in behavior terms).

Logical ordering--assuming the contents of the document require a sequential arrangement, the author has followed through with a reasonable pattern in his/her presentation.

Glossary--the author has listed and defined the key terms used in the document.

Table of contents/index--the author has included these aids for helping the reader to quickly locate items or topics within the document.

Color--when used, was the addition of color necessary and effective for enhancing the learning experience.

II. DESIGN ELEMENTS

Objectives communicated--does the author clearly state the expected performance in this section of the document?

Previous learning--does the author ask the reader to recall information and/or skills that he/she has learned before?

Motivation--does the author gain and maintain the reader's attention by using examples, pacing, repetition, cuing, etc?

Feedback--does the author provide a method of reinforcing the reader's correctness in performance by employing such techniques as asking and answering questions?

Self-assessment--does the author specifically list all of the criteria that will be used when judging the reader's product?

III. READABILITY

Vocabulary level--the proper choice of words which reflect the appropriate degree of difficulty or simplicity suitable for the reader and the subject matter.

Comprehensibility--the ease with which the reader can understand the content because of the author's clarity, tone, and uncomplicated literary style, organization.

Space--the aesthetically pleasing visual impact created by the arrangement and integration of the textual and illustrative materials.

Literary style--the general style of presentation in relation to attractiveness, appeal, use of non-technical ways of expression, etc.

Illustrations/photographs--when used, was the addition of illustrations and photographs helpful in understanding the material; based on principles of visual literacy?

IV. TYPE OF LEARNING

Information--communication as reception of descriptive facts.

Intellectual skills--generalization and application of previously learned information, skills, principles and concepts.

Cognitive strategies--creatively solving new problems by manipulating and integrating past intellectual experiences.

Motor skills--the physical activities involved in performing various tasks in different contexts.

Attitudes--an internalized state which influences a person's thoughts and/or behaviors toward objects, persons, or events.

V. HUMANISTIC APPROACH--an approach that is centered on human interests that takes into consideration the dignity of persons and their capacity for self-realization, including the following:

A. *Sex role image*--categorizing people into preconceived behaviors based on sex. Does the author assume people do have certain jobs, interests, and abilities primarily because of their sex?

B. *Racial and ethnic image*--assuming that because of a person's race or nationality that certain qualities and behaviors are predictable. Does the author include people of various races and nationalities; and if so, does the author avoid using conventional cliches of dress, speech, occupation and life style?

C. *Age stereotyping*--attaching to any person, on the basis of the age group to which they belong, a given set of characteristics disregarding the individual's personal uniqueness. Does the author regard every person as an individual with a variety of capabilities and interests?

D. *Occupational dignity*--granting that all jobs have inherent importance and usefulness. Does the author when making reference to any job, portray each occupation as having merit and value?

E. *Physical or mental handicaps*--any inability that limits normal participation or functioning. Does the author take into account varying abilities and allow for alternative procedures and performance standards?

F. *Socio-economic status*--the author's attitudes toward economic values. Does the author assume that his/her audience is middle class with financial means or is frequent mention made of alternatives to spending, such as recycling goods and/or encouraging the resourceful use of available tools and materials?

G. *Family structure*--the number and type of people indicated in the unit. Does the author make references to single parents; women as head of household; extended family members; and interracial family members?